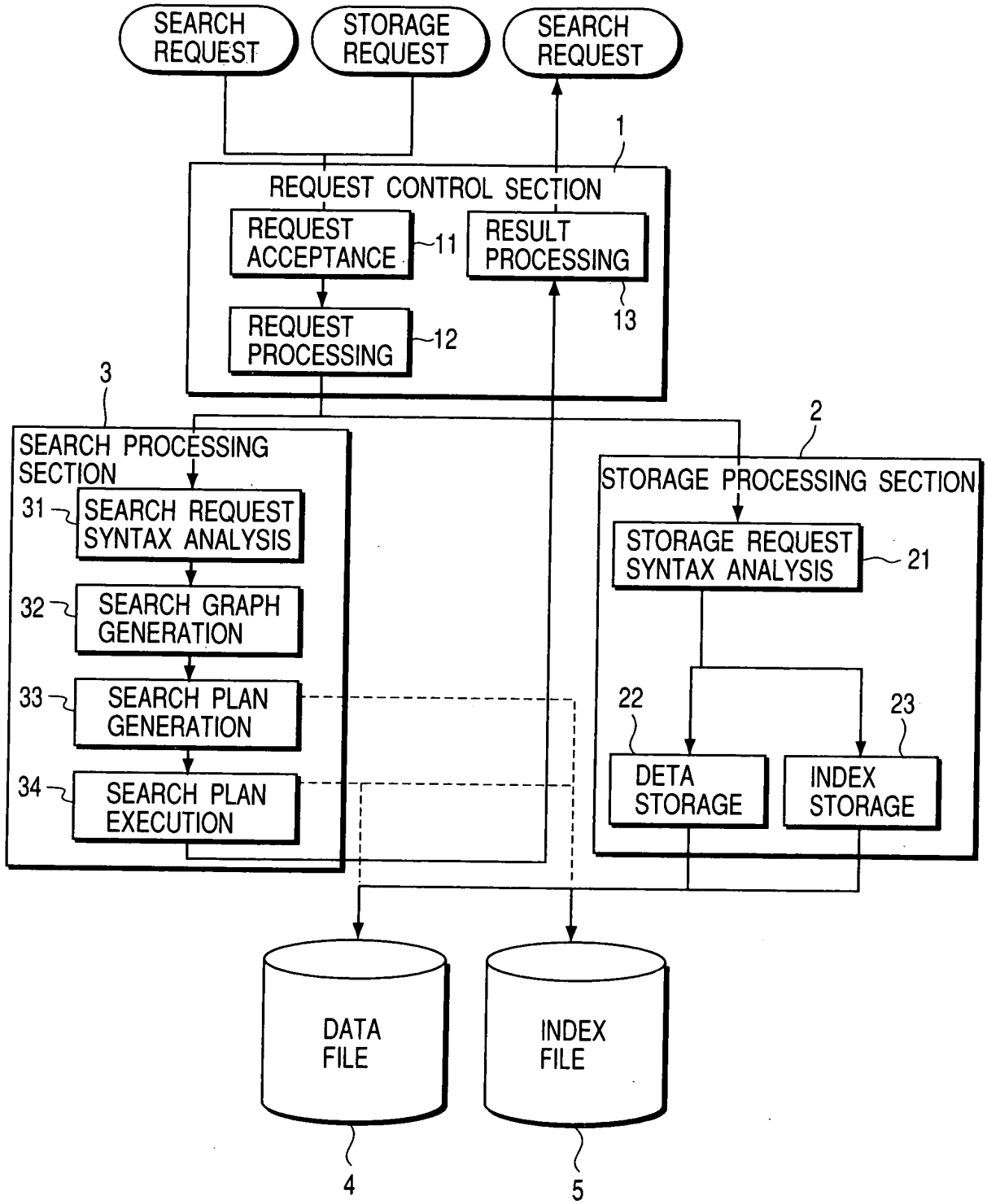

FIG. 1

```
<PATENT>
  <NAME>INFORMATION SEARCH APPARATUS</NAME>
  <APPLICANT.>T COMPANY</APPLICANT>
  <APPLICANTION NO.>PATENT APPLICATION HEI 10-XXXXXX</APPLICATION NO.>
  <FILING DATE>
    <YEAR>10</YEAR><MONTH>3</MONTH><DAY>12</DAY>
  </FILING DATE>
  <ABSTRACT>
    TO PROVIDE DATABASE ALLOWING TO CHANGE AS WILL INFORMATION PRESENTATION FORMAT FROM THE
    USER'S VIEWPOINT, TO ENLARGE INFORMATION EXPLOITATION RANGE,AND TO PROMOTE INFORMATION
    EXPLOITATION.
  </ABSTRACT>
  <KEY WORD>XML</KEY WORD>
  <KEY WORD>SEARCH</KEY WORD>
</PATENT>
```

FIG. 2

```
<CONCEPT NAME= "INFORMATION MODEL" >
 <CONCEPT NAME= "DOCUMENT" >
  <CONCEPT NAME= "STRUCTURED DOCUMENT" >
   <CONCEPT NAME= "XML" />
   <CONCEPT NAME= "SGML" />
  </CONCEPT NAME>
  <CONCEPT NAME= "NON STRUCTURED DOCUMENT" >
    <CONCEPT NAME= "TEXT" />
  </CONCEPT NAME>
 </CONCEPT NAME>
 <CONCEPT NAME= "RELATION" >
   ..............
 </CONCEPT NAME>
 <CONCEPT NAME= "OBJECT" >
  ..............
 </CONCEPT NAME>
</CONCEPT NAME>
```

FIG. 3

```
<CONCEPT NAME= "INFORMATION OPERATION" >
  <CONCEPT NAME= "SEARCH" />
  <CONCEPT NAME= "STORAGE" />
  <CONCEPT NAME= "PROCESSING" />
  <CONCEPT NAME= "DISTRIBUTION" />
</CONCEPT NAME>
```

FIG. 4

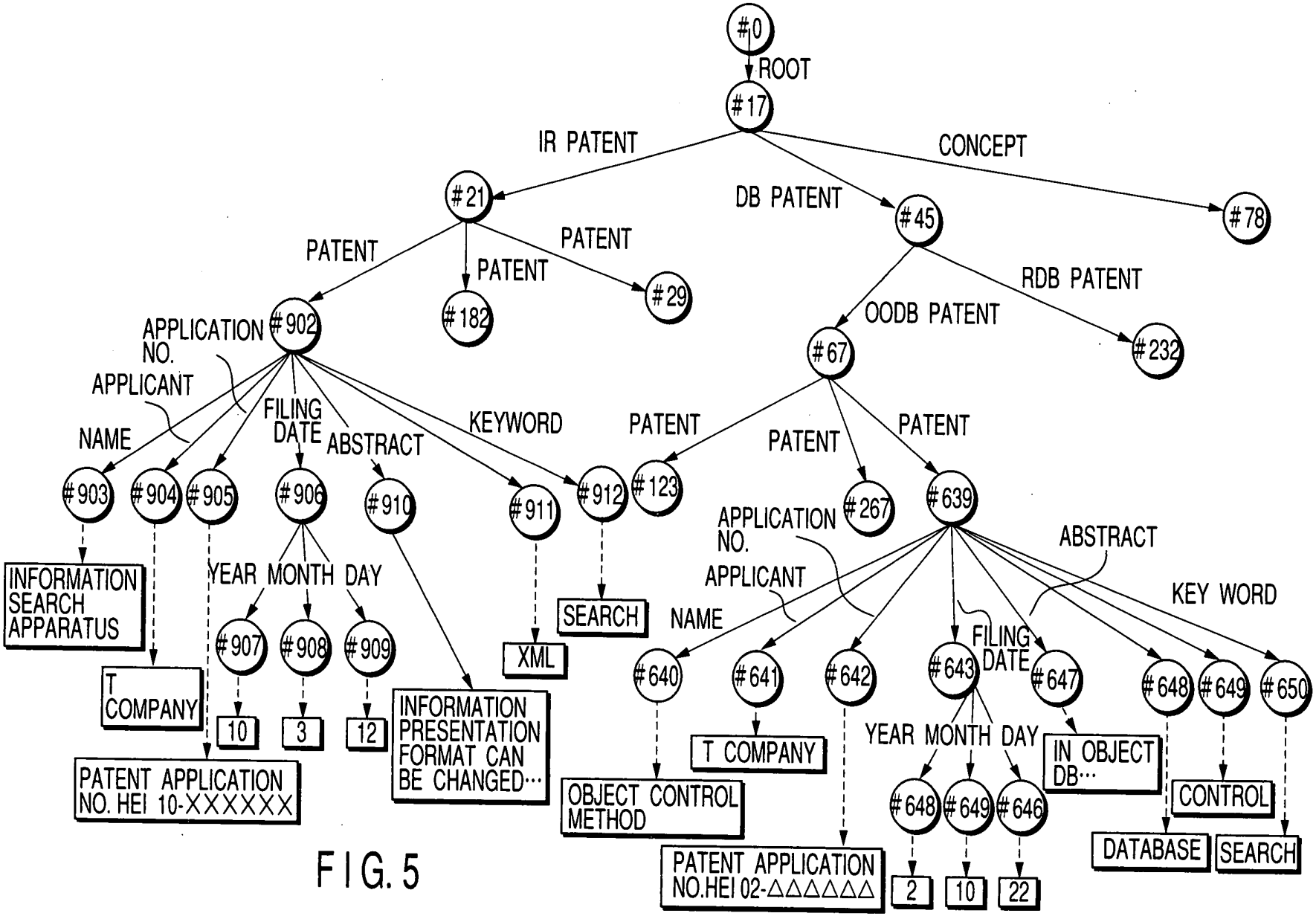

FIG. 5

```
INSERT "ROOT / IR PATENT"
          "<PATENT>
            <NAME>NFORMATION SEARCH APPARATUS</NAME>
            <APPLICANT.>T COMPANY</APPLICANT>
            <APPLICANTION NO.>PATENT APPLICATION HEI 10-XXXXXX</APPLICATION NO.>
            <FILING DATE>
              <YEAR>10</YEAR><MONTH>3</MONTH><DAY>12</DAY>
            </FILING DATE>
            <ABSTRACT>
              TO PROVIDE A DATABASE ALLOWING TO CHANGE AS WILL INFORMATION PRESENTATION FORMAT FROM
              THE USER'S VIEWPOINT, TO ENLARGE INFORMATION EXPLOITATION RANGE,AND TO PROMOTE INFORMATION
              EXPLOITATION.
             </ABSTRACT>
            <KEY WORD>XML</KEY WORD>
            <KEY WORD>SEARCH</KEY WORD>
            </PATENT>"
```

FIG. 6

```
SELECT
<DOCUMENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
  </DOCUMENT>
WHERE
<*/PATENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
    <KEY WORD>$x2</KEY WORD>
  </PATENT>FROM "ROOT/"
  $x2= "SEARCH"
```

FIG. 7

```
SELECT
<DOCUMENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
  </DOCUMENT>
WHERE
<*/PATENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
    <KEY WORD>$x2</KEY WORD>
  </PATENT>FROM "ROOT/"
  <CONCEPT NAME= "DOCUMENT" >
    <*/CONCEPT NAME=$x2/>
  </CONCEPT NAME>FROM "ROOT/"
```

FIG. 8

```
SELECT
  <DOCUMENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
    <CLASSIFICATION AXIS= "INFORMATION MODEL" >$x3</>
    <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
     $x4</CLASSIFICATION>
  </DOCUMENT>
WHERE
  <*/PATENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
    <KEY WORD>$x2</KEY WORD>
  </PATENT>FROM "ROOT/"
  <*/CONCEPT NAME= "INFORMATION MODEL" >
   <CONCEPT NAME=$x3>
     <*/CONCEPT NAME=$x2/>
   </CONCEPT >
  </CONCEPT >FROM "ROOT/"
  <*/CONCEPT NAME= "INFORMATION OPERATION" >
    <CONCEPT NAME=$x4>
      <*/CONCEPT NAME=$x2/>
    </CONCEPT >
  </CONCEPT>FROM "ROOT/"
```

FIG. 9

```
<RESULT>
 <DOCUMENT>
   <APPLICATION NO.>PATENT APPLICATION HEI 10-XXXXXX</APPLICATION NO.
 <CLASSIFICATION AXIS= "INFORMATION MODEL" >DOCUMENT</CLASSIFICATION>
   <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
     SEARCH</CLASSIFICATION>
 </DOCUMENT>
 <DOCUMENT>
   <APPLICATION NO.>PATENT APPLICATION HEI 09-□□□□□□</APPLICATION NO.>
   <CLASSIFICATION AXIS= "INFORMATION MODEL" >RELATION</CLASSIFICATION>
   <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
     STORAGE</CLASSIFICATION>
 </DOCUMENT>
 <DOCUMENT>
   <APPLICATION NO.>PATENT APPLICATION HEI 10-○○○○○○</APPLICATION NO.>
   <CLASSIFICATION AXIS= "INFORMATION MODEL" >RELATION</CLASSIFICATION>
   <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
     SEARCH</CLASSIFICATION>
 </DOCUMENT>
</RESULT>
```

FIG. 10

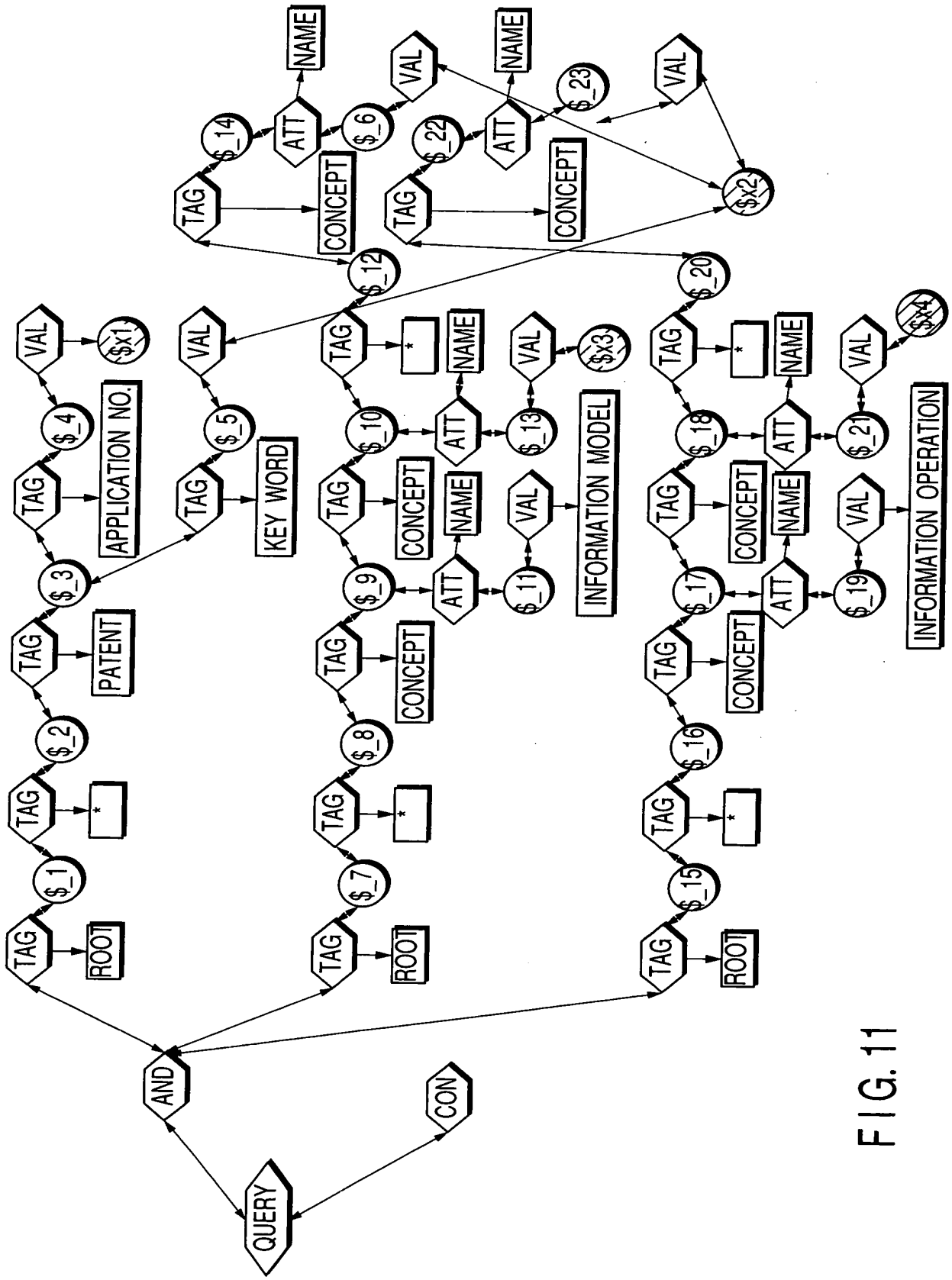

FIG. 11

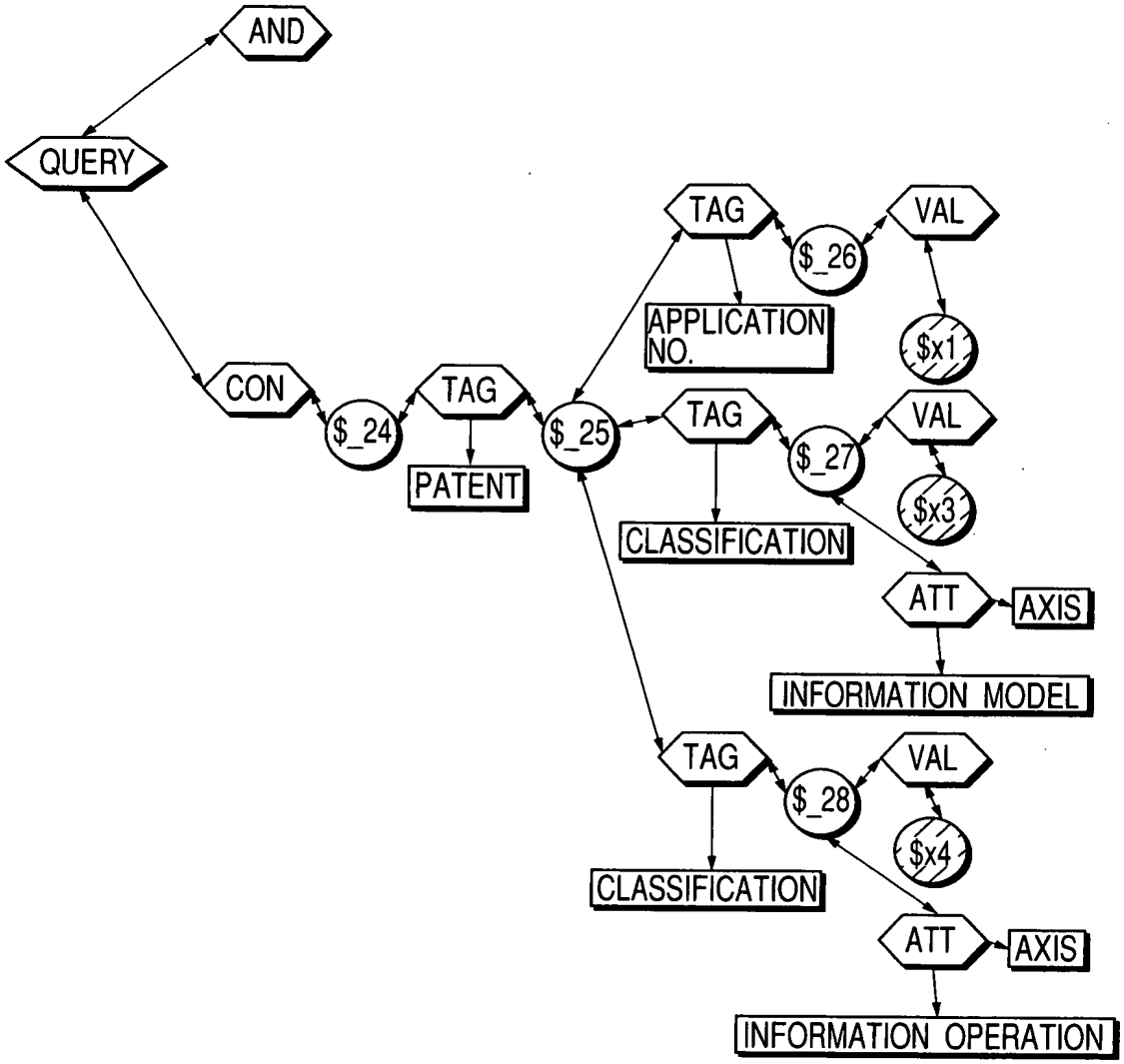

FIG. 12

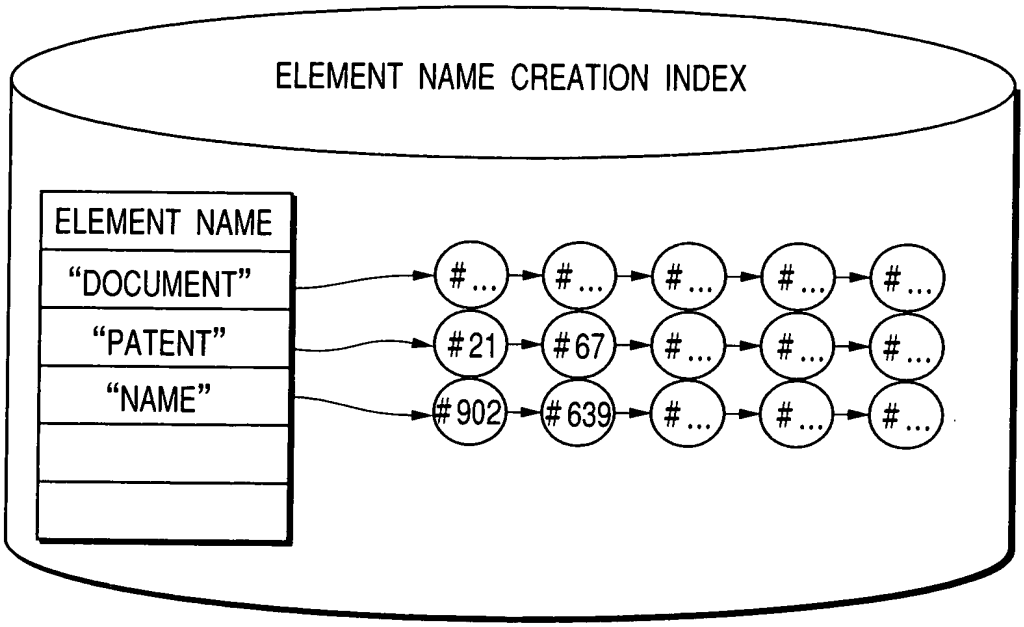

FIG. 13

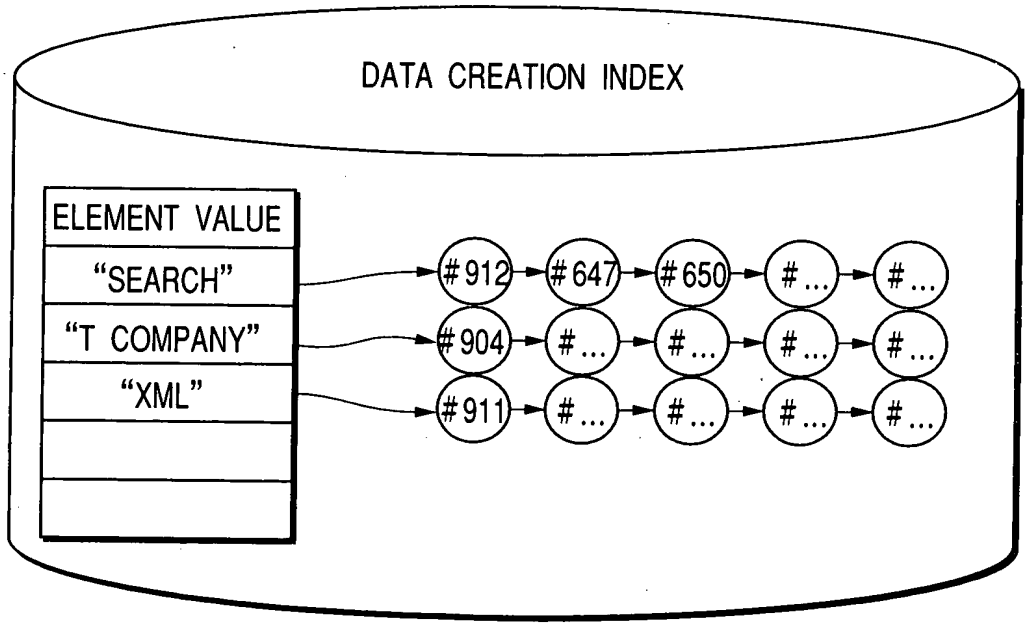

FIG. 14

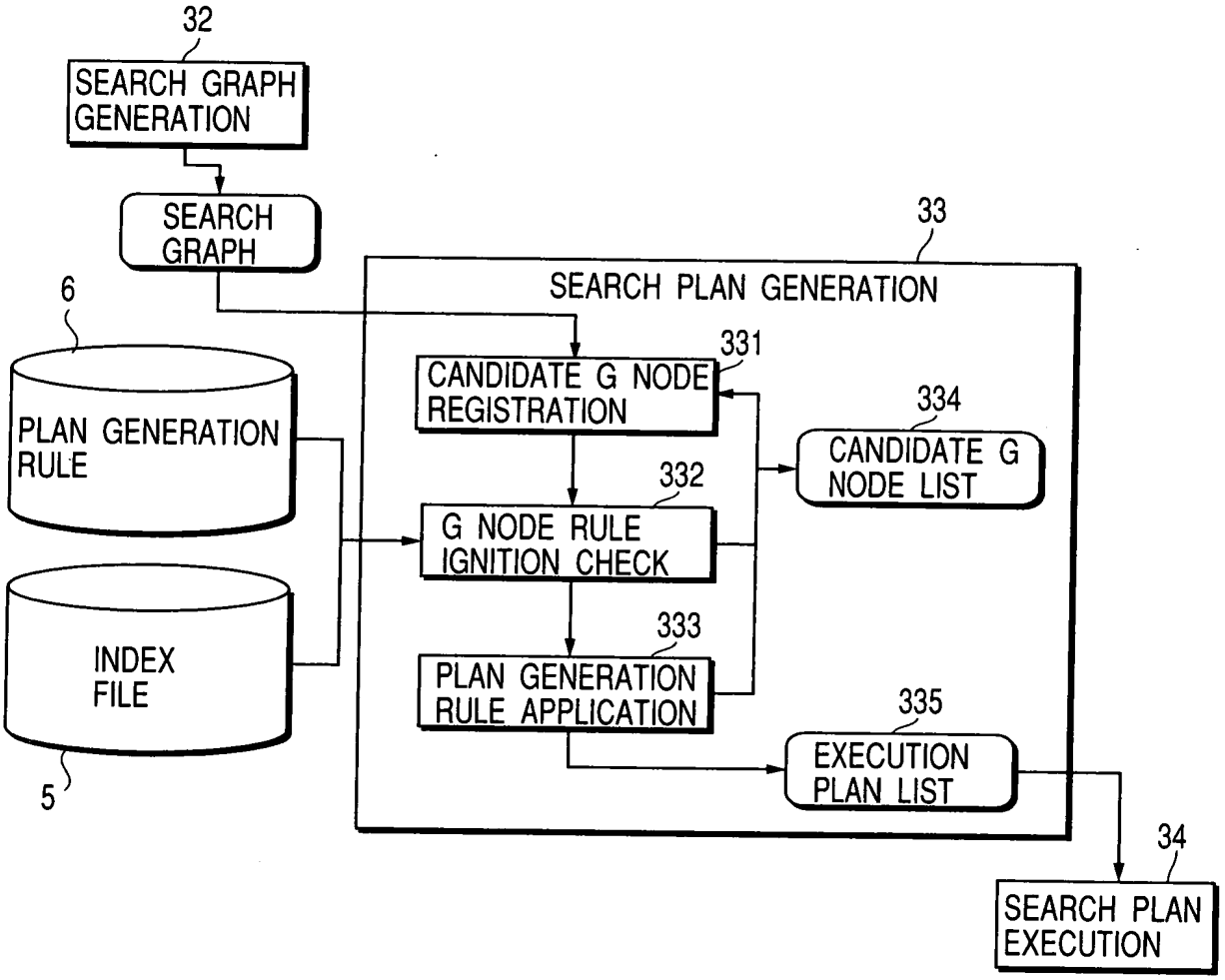

FIG. 15

NO.	G NODE	COST	IF				THEN
			OP1	OP2	OP3	OTHERS	OPERATOR
01	TAG	1.0	AND	M	N		PATHINST
02	TAG	0.5	M	M	N		PATHEXPAND1
03	TAG	0.2	N	M	N	ELEMENT NAME CREATION INDEX EXISTS IN OP2	PATHEXPAND2
04	TAG	0.1	N	M	M	REVERSE HIERARCHIC INDEX EXISTS IN OP3	PATHEXPAND3
05	TAG	0.3	M	M	M		PATHCHECK
06	TAG	0.6	N	"*"	M	OP2 OF OP1 ADJACENT TAG NODE IS "ROOT"	NOP
...							
11	VAR	0.5	M	M			JOIN
...	VAL	0.2	M	N			VALUE
21							
...							
31	CMP	1.0	M	N			SELECT
32	CMP	0.1	N	M		DATA INDEX FOR OP2 EXISTS	FIND
...							
41	AND						
...							

FIG. 16

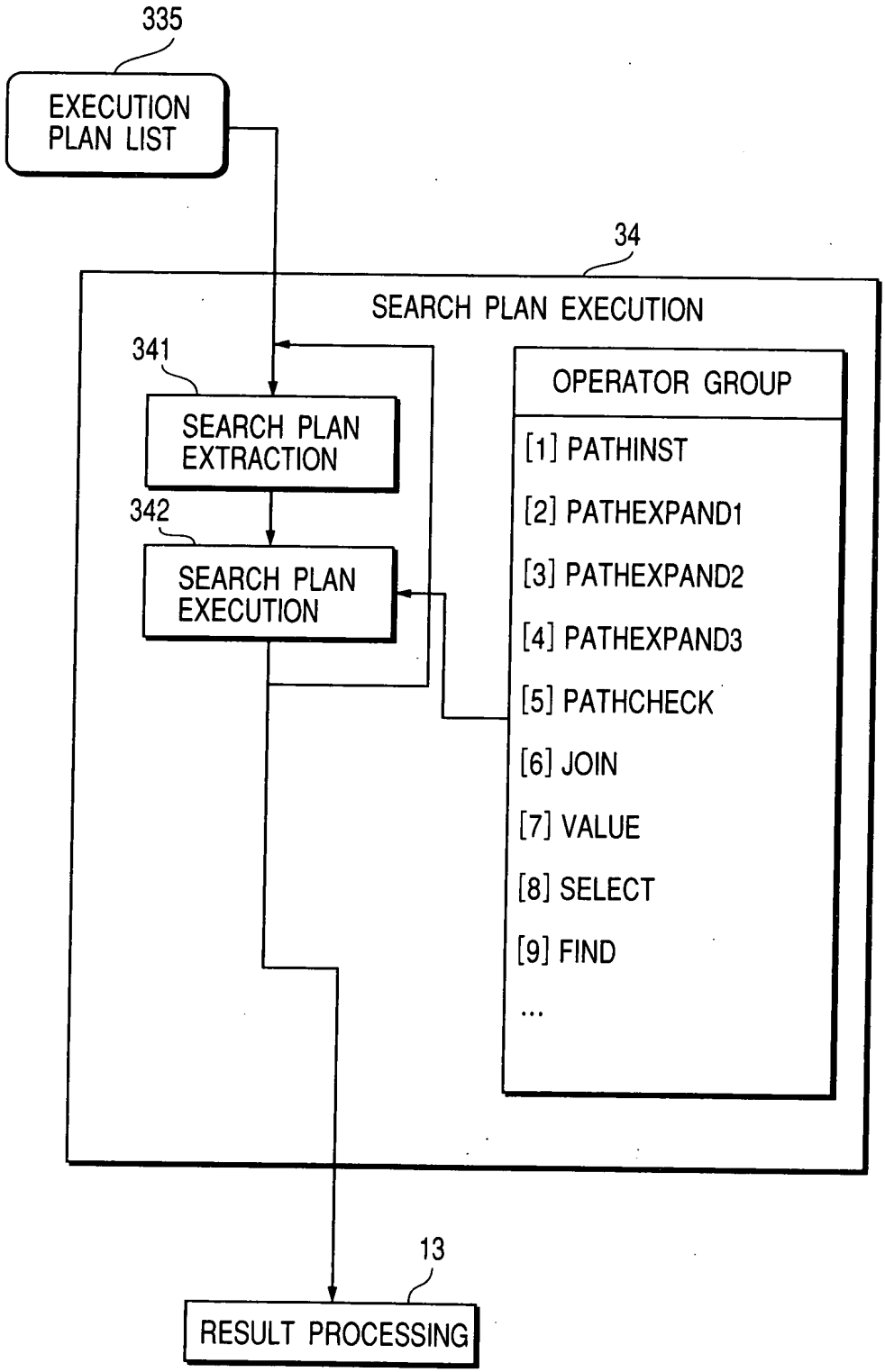

FIG. 17

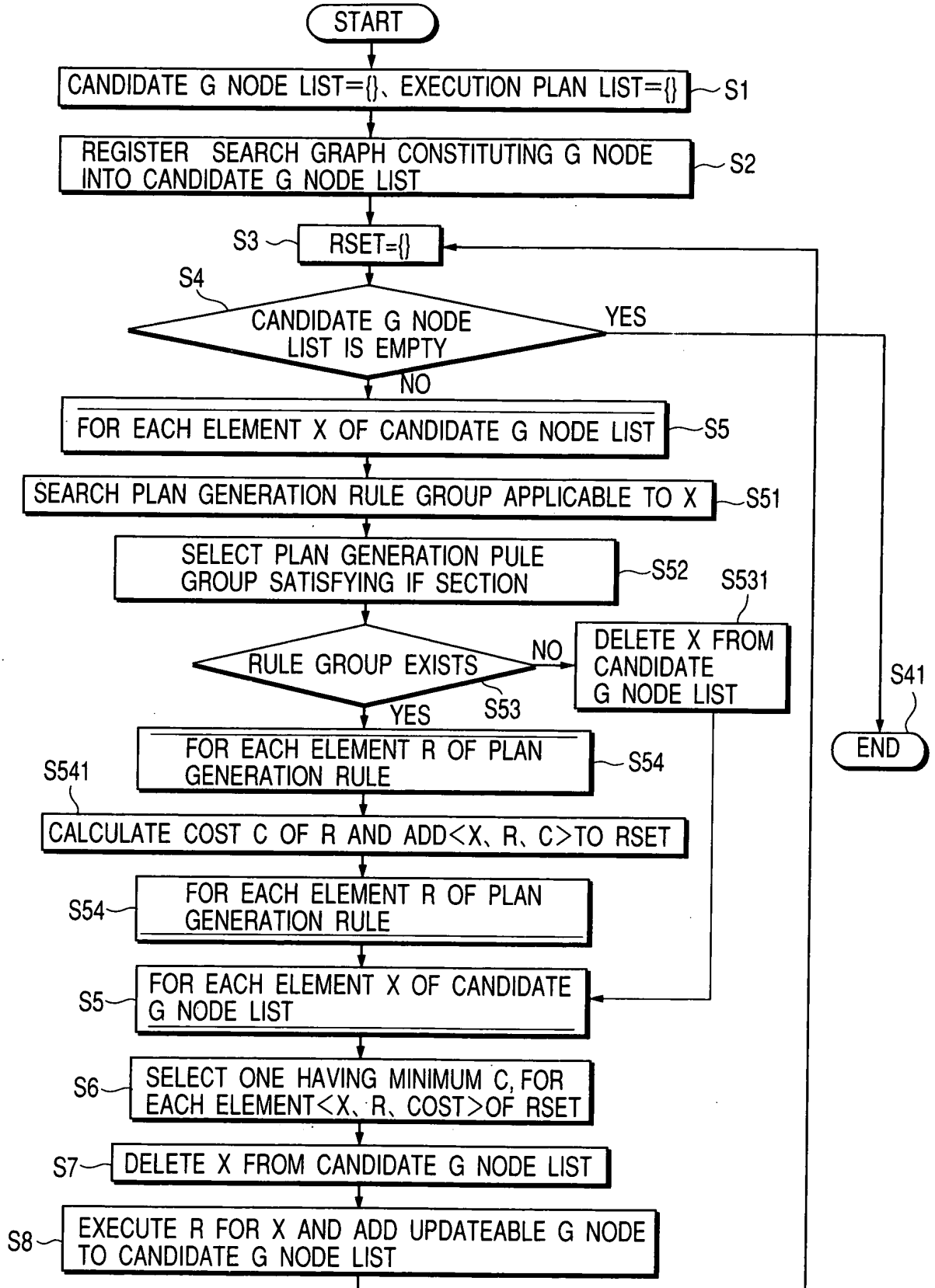

FIG. 18

```
SELECT
  <DUCUMENT>$x</DUCUMENT>
WHERE
  <*/PATENT>
    <NAME>$X</NAME>
  </PATENT>FROM "ROOT/"
  $x LIKE "SEARCH"
```

FIG. 19

STEP	G NODE	RULE NO.	OPERATOR
STEP1	CMP	APPLY RULE 32	FIND
STEP2	TAG	APPLY RULE 03	PATHEXPAND2
STEP3	TAG	APPLY RULE 02	PATHEXPAND1
STEP4	VAL	APPLY RULE 21	VALUE
STEP5	VAR	APPLY RULE 11	JOIN
STEP6	TAG	APPLY RULE 06	NOP
STEP7	CON	APPLY RULE	CONSTRUCT

FIG. 21

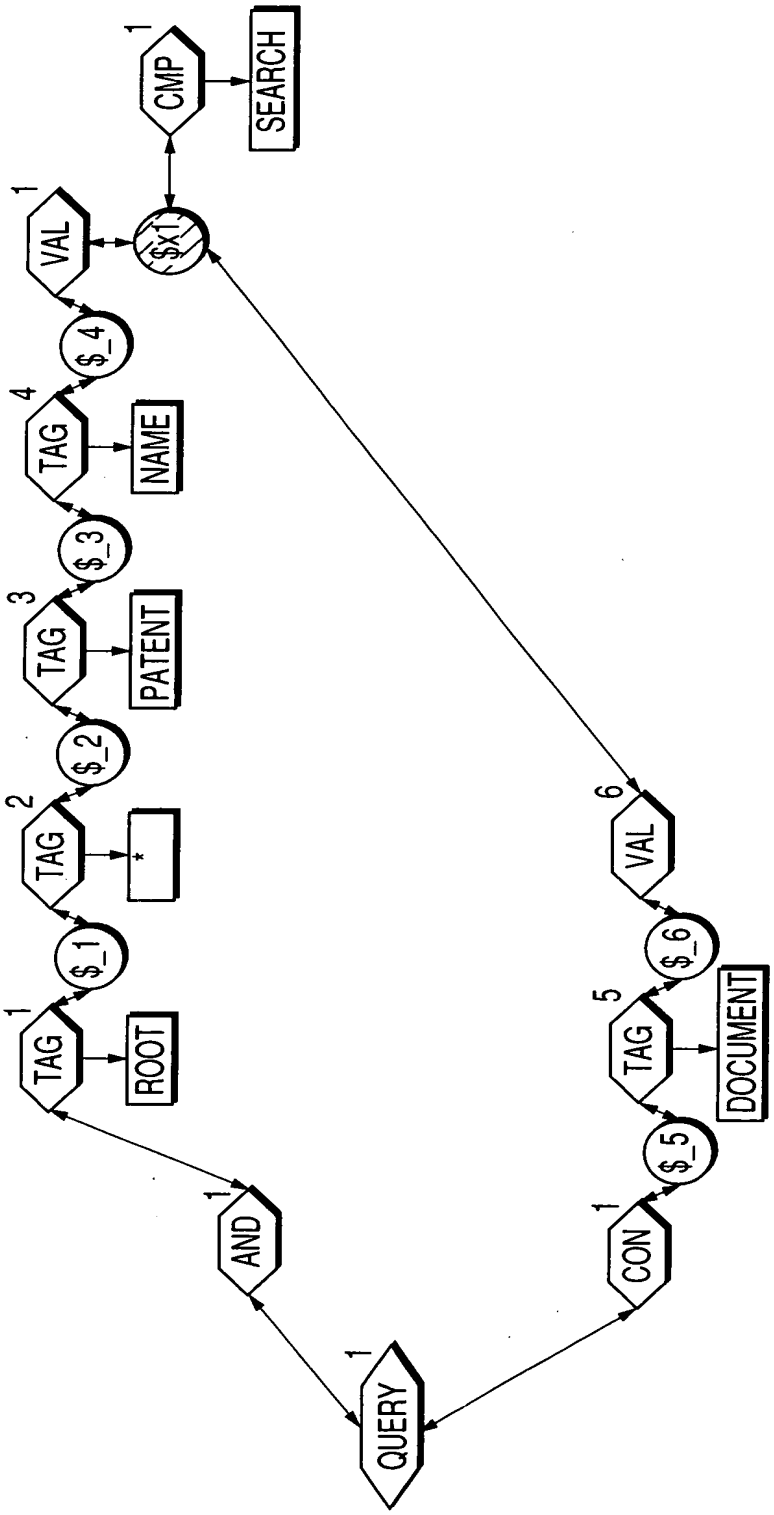

FIG. 20

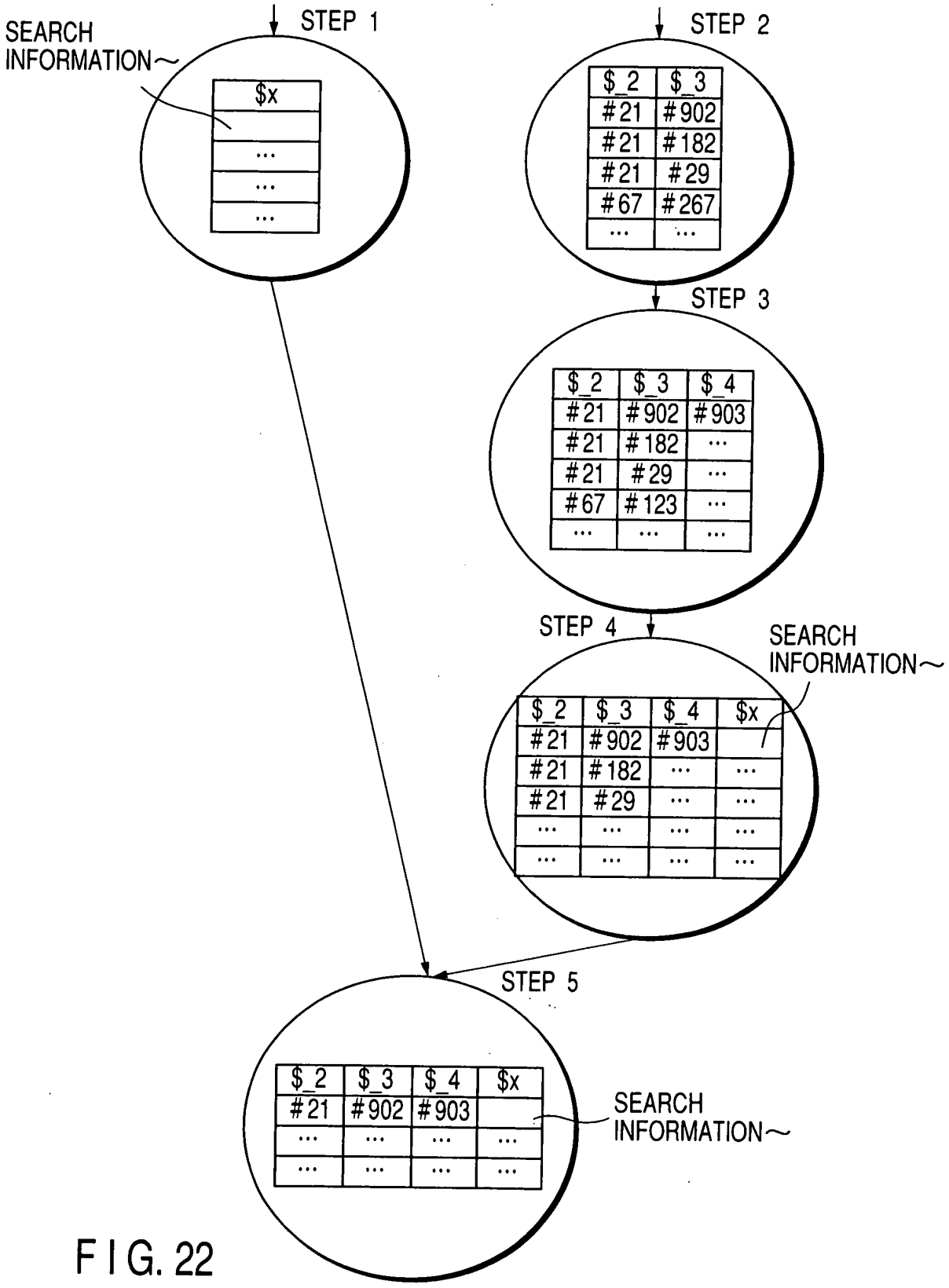

FIG. 22

```
<RESULT>
  <DOCUMENT>INFORMATION SEARCH APPARATUS</DOCUMENT>
  <DOCUMENT>DATA SEARCH METHOD</DOCUMENT>
  <DOCUMENT>METHOD FOR SEARCH PROCESSING
            OPTIMIZATION AND SEARCH METHOD</DOCUMENT>
</RESULT>
```

FIG. 23

STEP	G NODE	RULE NO.	OPERATOR
STEP 1	TAG	APPLY RULE 01	PATHINST
STEP 2	TAG	APPLY RULE 02	PATHEXPAND1
STEP 3	TAG	APPLY RULE 02	PATHEXPAND1
STEP 4	TAG	APPLY RULE 02	PATHEXPAND1
STEP 5	VAL	APPLY RULE 21	VALUE
STEP 6	CMP	APPLY RULE 31	SELECT
STEP 7	CON	APPLY RULE	CONSTRUCT

FIG. 24

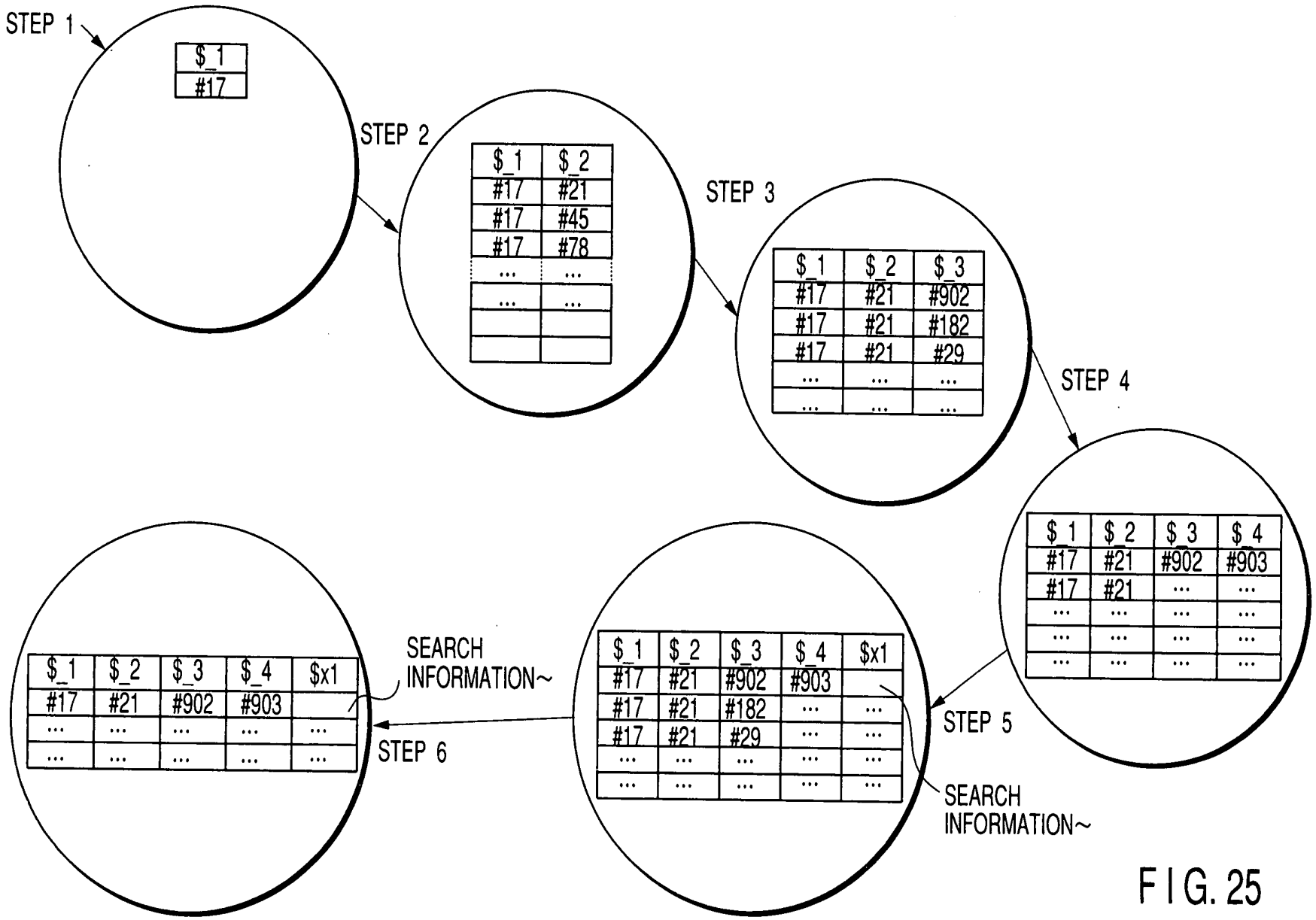

FIG. 25

	DOCUMENT	RELATION	OBJECT
SEARCH	PAT.APPL.HEI 10-XXXXXX	PAT.APPL.HEI 10-OOOOOO	
STORAGE		PAT.APPL.HEI 09-OOOOOO	
PROCESSING			
DISTRIBUTION			

FIG. 26

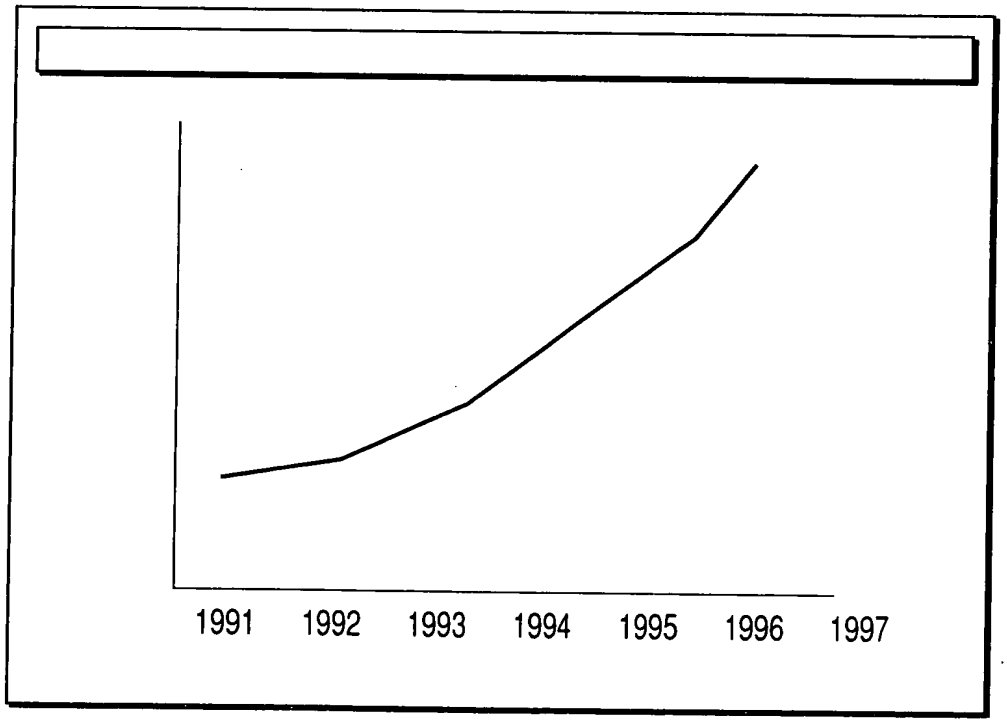

FIG. 27